Amendment to the Claims:

1. (Currently Amended) A method for controlling a drive motor of a positive displacement vacuum pump, the method comprising:

storing a continuous curve indicating a respective speed n of the drive motor for inlet pressure values p, the curve comprising:

an upper range for inlet pressure values p larger than or equal to an upper limit pressure p_1, a single constant upper speed value n_1 being associated with said upper range, and

an alteration range for inlet pressure values p smaller than the upper limit pressure p_1, at least below the upper limit pressure, each inlet pressure value p being associated with a corresponding speed value n_v;

continuously determining the inlet pressure value p;

determining from the curve the speed n associated with the determined inlet pressure value p in the curve; and

operating the drive motor at the determined speed n, the determined speed value n being less than or equal to the upper speed value n_1.

2. (Previously Presented) The method according to claim 1, wherein the curve comprises a lower range for inlet pressure values p smaller than or equal to a lower limit pressure p_2, a single constant lower speed value n_2 being associated with the lower range, and the alteration range being limited to inlet pressure values p larger than the lower limit pressure p_2, the upper speed value n_1 being larger than the lower speed value n_2.

3. (Currently Amended) A method for controlling a drive motor of a positive displacement vacuum pump, the method comprising :

storing a continuous curve indicating a respective speed n of the drive motor for each inlet pressure ~~values~~ value p, the curve comprising:

a lower range for inlet pressure values p smaller than or equal to a lower limit pressure p_2, a single constant lower speed value n_2 being associated with said lower range,

an alteration range for inlet pressure values p larger than the lower limit pressure p_2, each inlet pressure value p being associated with a corresponding speed value n_v for pressures above the lower limit pressure p_2;

continuously determining the inlet pressure value p;

determining from the curve the speed n associated with the determined inlet pressure value p in the curve; and

operating the drive motor at the determined speed n, the speed n being equal to or greater than the lower speed value n_2.

4. (Previously Presented) The method according to claim 1, wherein the speed n_v decreases as the corresponding inlet pressure p decreases in the alteration range.

5. (Previously Presented) The method according to claim 2, wherein the upper limit value p_1 ranges between 20 mbar and 1 mbar, and the lower limit value p_2 ranges between 1.0 mbar and 0.005 mbar.

6. (Previously Presented) The method according to claim 2, wherein the upper constant speed value n_1 ranges between 2,200 and 1,000 rpm, and the lower constant speed value n_2 ranges between 300 and 1,300 rpm.

7. (Previously Presented) The method according to claim 1, wherein the positive displacement vacuum pump is a fore vacuum pump arranged upstream of a high vacuum pump, and the inlet pressure p is a suction-side pressure of the high vacuum pump.

8. (Previously Presented) The method according to claim 1, wherein the curve is saved in a characteristic diagram storage.

9. (Previously Presented) The method according to claim 1, wherein the drive motor is an asynchronous motor.

10. (Currently Amended) A positive displacement vacuum pump comprising:

a drive motor, an inlet pressure sensor and a drive motor control for controlling a speed n of the drive motor in dependence on the inlet pressure value p continuously determined by the inlet pressure sensor,

the drive motor control comprising a storage for storing a continuous curve which indicates a respective speed n of the drive motor for each inlet pressure ~~values~~ value p of the inlet pressure sensor, the curve comprising:

at least one of (a) an upper range for inlet pressure values p larger than or equal to an upper limit pressure p_1, a single constant upper speed value n_1 being associated with said upper range and (b) a lower range for the inlet pressure values p lower than or equal to a lower pressure limit p_2, a single constant lower speed value n_2 being associated with the lower range, the upper speed value n_1 being greater than the lower speed value n_2; and

an alteration range for inlet pressure values p smaller than the upper limit pressure p_1 or larger than the lower limit pressure p_2, in the alteration range each inlet pressure value p being associated with a corresponding speed value n_v.

11. (Previously Presented) The positive displacement vacuum pump according to claim 10, wherein the drive motor control comprises a processor which has connected therewith the inlet pressure sensor and which evaluates signals from the inlet pressure sensor.

12. (Currently Amended) The method according to claim 3, wherein in the alteration range each value of ~~decreaseing~~ decreasing inlet pressure p is associated with a corresponding decreasing speed value n_v.

13. (Previously Presented) The method according to claim 3, wherein the positive displacement vacuum pump is a fore vacuum pump arranged upstream of a high vacuum pump, and the inlet pressure p is a suction-side pressure of the high vacuum pump.

14. (Previously Presented) The method according to claim 3, wherein the curve is saved in a characteristic diagram storage.

15. (Previously Presented) The method according to claim 3, wherein the drive motor is an asynchronous motor.

16. (Previously Presented) The positive displacement vacuum pump according to claim 10, wherein a high vacuum pump is disposed downstream such that the inlet pressure is a suction-side pressure of the high vacuum pump.

17. (New) A positive displacement vacuum pump system comprising:

a vacuum pump;

a drive motor which drives a rotor of the vacuum pump at an adjustable drive speed n;

an inlet pressure sensor that senses an inlet pressure p at an inlet of the vacuum pump;

a memory which stores a preselected relationship between the inlet pressure p and the drive speed n in which relationship each inlet pressure p_x in an alteration range of operating pressures below an upper-pressure limit p_1 and/or above a lower limit pressure p_2 has a single preselected corresponding drive speed n_x; and

a drive motor control which (1) receives a currently sensed inlet pressure p_v from the inlet pressure sensor, (2) retrieves a corresponding drive speed n_v corresponding to the current inlet pressure p_v from the memory, and (3) controls the drive motor to rotate the rotor at the retrieved corresponding drive speed n_v.

18. (New) The positive displacement vacuum pump system according to claim 17, wherein the relationship between the inlet pressure p and the drive speed n is a curve, the curve comprising:

at least one of (a) an upper range for the inlet pressure p larger than or equal to the upper limit pressure p_1, a single constant upper drive speed n_1 being associated with all inlet pressures in said

upper range and (b) a lower range for the inlet pressure p lower than or equal to the lower pressure limit p_2, a single constant lower drive speed value n_2 being associated with all inlet pressures in the lower range; and

the alteration range for the inlet pressure p smaller than the upper limit pressure p_1 or larger than the lower limit pressure p_2, each inlet pressure p_x having the single corresponding drive speed n_x in the alteration range.

19. (New) The positive displacement vacuum pump system according to claim 17, wherein the pressure sensor continuously senses the inlet pressure p and the drive motor control continuously adjusts the drive speed with changes in the sensed inlet pressure.

20. (New) The positive displacement pump system according to claim 19, wherein the relationship between the inlet pressure p and the drive speed n is a continuous curve.